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A MEMOIR ON THE YELLOW FEVER OF THE WEST INDIES.

As it occurred in the year 1838, at St. Pierre, island of Martinique. By E. RUFZ, D.M.P.,
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Translated for the Medical Examiner, from the French Manuscript.—[Continued.]

CASE VI.

M. DE LUCOTTE, aid-de-camp to the governor, thirty-five years of age, of a robust constitution, and a resident in the colony for six months, led a very irregular life,—walked in the heat of the sun, spent his nights at concerts and suppers, and used Madeira wine very freely. He seemed to brave the disease, trusting to his having lived four or five years in the Morea, where he found the heat more intolerable than in Martinique.

On the evening of the 11th of December I had occasion to be with him: I found him perfectly well. On the 12th, at 7 in the morning, I found him suffering with a severe pain in the head, seated in the middle of the forehead, which he attributed to a sick headach caused by his having been obliged to rise very early, in order to bid adieu to some one, who took his departure that morning. His face was red, his eyes injected, his skin warm, his pulse eighty-four, and full; he was restless, and felt much uneasiness. The development of these symptoms had not been preceded by a chill.

The disease fully declared itself during the day. At 4 o'clock the cephalalgia was insupportable, accompanied with pains in the loins, great heat, and a very full pulse, which was one hundred and sixteen: I took at least sixteen ounces of blood. This bleeding was followed by prostration, which continued for some time. The coagulum was red, not very firm, and without buff; the serum amounted to about a third.

On the night of the 12th he was calm enough; the cephalalgia had diminished, but it resumed its severity on the following day; the face remained flushed, and the eyes injected; there was a slight, but very harrassing cough, with a continual expectoration, and a stopping of the nose; the tongue was natural, slightly whitish; no thirst, a bad taste in the mouth; neither nausea nor vomiting; an almost entire absence of pain in the epigastrium; the abdomen yielding, and free from pain; some stools were obtained by enemata; perspiration very moderate.

During the night of 13th he was very restless, and disturbed by dreams. During the

day of the 14th the symptoms were the same, and of the same intensity as on the day before. The restlessness was extreme; the patient changed his bed; the pulse was from eighty-eight to ninety-two, and regular. Towards night the patient began to complain of nausea, and made attempts to vomit.

The night of the 15th he was restless; the symptoms nearly the same; the cephalalgia diminished. There was, at the same time, some cough and expectoration, but there was still extreme agitation; the nausea recurred more frequently. He also vomited some whitish, ropy, and singularly glairy matter. The tongue began to be covered with a yellowish coat; the urine was moderate, clear, and neither scanty nor very abundant; the abdomen yielding; the epigastrium free from pain; the temperature almost natural; the pulse eighty-eight, and regular; the countenance cheerful, and of a lighter colour. Judging by the last two signs only—the countenance and the pulse—one would have thought that the patient was in a state approaching convalescence; but these signs were entirely at variance with the agitation which tormented him.

Though I had watched the patient with some care up to this time, I had discovered no remission, and still less an intermission, in the succession of these phenomena.

After the bleeding the patient was kept on diluents, such as chicken broth, *eau de cerises*, lemonade, sugared water, pure water, &c. Semicupia and injections were used. The night of the 15th he was still very restless; the matter vomited assumed a grayish tint. In the morning thirty leeches were applied to the epigastrium. The leech-bites bled copiously until the next day, when they presented a purple appearance.

On the 16th the nausea and vomiting continued; eleven hours after the application of the leeches there was epistaxis to the amount of half a spoonful; restlessness still considerable; faintings frequent. The patient had an inclination to vomit whenever he moved; pulse seventy-six, full and regular; skin warm and moist; urine less abundant, and more highly coloured, with a slight deposit. The countenance began to assume an expression of suffering.

17th, the tenth day of the disease.—Still restless during the night. The matter vomited had commenced to exhibit streaks of a black substance resembling soot; during the whole day there was a constant vomiting of a blackish matter. Towards noon there was, in addition to this, bloody sputa, the source of

which was the surface of the tongue, and also the internal surface of the lips. These parts were, in fact, of a deep red colour, and stained the fingers with blood when they were touched; they were not at all swelled, but very sensitive, especially on the contact of acidulous drinks. Soda water produced a burning sensation.

The thirst was more acute than on the preceding day; the abdomen still yielding, and the epigastric region hardly sensible under pressure.

There was constant nausea until death took place, especially when the patient lay on the left side. The paroxysms of vomiting were very frequent, and the matter ejected was stained with black, and with pure blood. The stools were rare, and small, and of a grayish colour. The discharges of urine were few during the day of the 17th, and ceased entirely from the night of the 17th to the 18th.

The cephalalgia had disappeared since the third day; the agitation continued, with rather less pain towards the end. The countenance became more and more expressive of suffering.

There was slight delirium during the night of the 17th. From the 16th the pulse was regular, moderately full, and continued at seventy-six. On the 18th it became more irregular, fell to sixty-eight, and on the approach of death became quite insensible. Syncope became more frequent as the disease advanced.

The skin was soft and moist, and preserved its natural temperature, except at the moment when fainting occurred, at which time it became cold,—only, however, to be immediately restored to its former state.

The continued coldness of the extremities did not commence until the 18th, at 4 o'clock, and from that time continued till death.

Death took place the same day, at 9 o'clock. At the same time that the extremities grew cold, the anxiety of the patient became extreme; the respiration embarrassed, short, and very frequent; the pulse insensible. The nausea and vomiting ceased. His strength was pretty well preserved, for he could raise himself to a sitting posture with considerable quickness. He could not, however, lie on the left side, and complained of intense pain in the præcordial region. At 9 o'clock convulsions came on, and death quickly ensued.

This last evening blisters were applied, and in his last moments sinapisms.

This case presents a very complete group of the symptoms of the fever. It is much to be regretted that an autopsy was not made.

Anatomical lesions.—Of nine patients who died, (among those whom I attended, and those on whose cases I was called in consultation,) I have been able to observe the anatomical lesions of three only. Here these cases are reported. For this reason, I shall here confine myself to a few remarks.

The putrefaction of the body after yellow

fever is not more rapid than after other acute diseases, other things being equal. The odour is not more decided; and the interment may, without inconvenience, be postponed until twenty-four hours after death.

The yellow colouration took place in these three cases; in two it did not occur until after death. Purple ecchymoses were also formed, especially on the most dependent parts.

In the cavity of the cranium there was fluid black blood in the sinuses; a dark injection of all the vessels of the membranes; little serum under the arachnoid, or in the ventricles. The substance of the brain was injected, and rather firm than softened.

The lungs were filled with dark-coloured blood, especially the posterior half of their inferior lobes. In one case, (that of Sophie,) there was an exudation of blood into the bronchia, and into the tissue of the lung itself. (See case.)

The quantity of serum effused into the pleuræ or pericardium, was never abnormal. M. Catel, physician of the hospital, told me that in one case he found an effusion of blood into the pericardium.

The heart was somewhat flaccid, but not softened; it contained black blood, and sometimes a yellowish clot, small and not adherent. The aorta and the large vessels also contained black blood; their coats were in their natural state, without any red colouring.

The peritonæum contained no effusion; that portion of the membrane which covers the intestines, was sticky and injected.

The stomach contained a greater or less quantity of black matter. This matter dyed the mucous membrane red, but after the latter was washed, it was seen to preserve a rose colour, which was diffused and very delicate, and did not result from a distinct arborescence. Mingled with this colouring, were round spots, formed of black blood, and quite distinct from the rose colour, which might be compared to flea-bites, or to the spots of purpura hæmorrhagica. This mucous membrane was neither thickened nor softened; but it was evidently less tenacious; that is to say, that when attempts were made to detach shreds of it, the shreds broke sooner than they usually do.

The small intestines contained a grayish or whitish matter, particularly the jejunum. Their mucous membrane offered the same appearance as that of the stomach. The purple dotting was more marked, and in the case of one patient, spots were formed as large as the thumb-nail. I suppose that these are the spots which on a superficial examination have been pointed out by authors as traces of gangrene; they are only rare ecchymoses. In some cases the glands of Brunner were here and there of the size of millet seeds; but the glands of Peyer have never presented any modification. I learn from M. Catel, that at the hospital they have the same thing in all the bodies. This

fact independently of others, is sufficient to distinguish yellow fever from typhoid.

In one case, the large intestine was the seat of a considerable effusion of blood. In the remainder, its mucous membrane was like that of the stomach and small intestines, bright red, and easily torn without other alterations. The mesenteric glands were a little enlarged, but pretty firm, and almost in their natural state.

As for the liver, I found but twice that yellow colouring, which was the principal lesion in the epidemic of Gibraltar. In case eighth, the liver was red, and its vessels contained a great deal of blood, there being no other alteration. I have been informed by M. Catel, who had occasion to make a great many autopsies, that this yellow discolouration of the liver took place in all cases.

The gall-bladder contained little bile; the latter was of a greenish colour. In the case of M. Fraquet, its mucous membrane exhibited a remarkable injection. In the case of Dr. Seisson, we shall see an actual inflammation of this membrane.

The spleen was in one case a little larger than ordinary, and in the other, perfectly natural.

The kidneys were only, like the other organs, filled with fluid blood of a dark colour.

The bladder in one case presented an effusion of blood.

CASE VII.

Sophie, aged twenty-eight years, a native of Champagne, brought as a nurse to Martinique in December last, of a strong constitution, and eminently sanguine temperament. On the 29th of January, she weaned the child which she had been suckling. From the time of her arrival in the colony until this epoch, she had always enjoyed good health.

In spite of my advice to the contrary, Sophie would take salts in order to make her milk pass off; she took about two drachms a day. After the second dose she felt a pain in the head, general uneasiness, and an accession of fever, which she considered as her milk fever. Three days after this, she recommenced taking salts, and she had taken the eighth dose without its having produced any purgative effect, when, on the morning of the 10th February, she was seized with a very severe headach, (without a previous chill) accompanied by redness of the skin, and injection of the conjunctivæ; skin warm; pulse frequent; contusive pain in the limbs; prostration of strength very notable from the commencement; tongue red at the tip, very foul and yellowish at the base; abdomen a little meteorized, and very sensitive to the touch; no evacuations; urine clear and pretty abundant.

(Enemata, pediluvia, lemonade.)

From this moment, the symptoms were more and more developed.

The cephalalgia, after having lasted with

great severity for forty-eight hours, disappeared, and was replaced by great dulness.

On the 11th, the second night of her disease, there was delirium, her sleep was much disturbed. The drowsiness was constant; the prostration of strength very notable.

The second day she vomited some whitish matter.

On the third and fourth (12th and 13th of February) the vomiting recurred two or three times a day, the matter ejected being always of a whitish colour; it did not exist on the subsequent days.

Her thirst, which had been almost inappreciable, until the third day, became intense and continued until death. At the same time, the tongue grew redder at the tip, and appeared to have a tendency to become dry.

The abdomen continued all the time meteorized and very sensitive.

Up to the fourth day, only one or two stools a day had been obtained by injections. On the fourth day (the 13th February) she had ten stools of a whitish colour, resembling rice custard. The following day these evacuations became very frequent and almost involuntary; the stools assumed a red tint.

On this day her urine was suppressed, and did not re-appear.

Her pulse, which, during the first two days was 100, full, soft and regular, fell on the third day to 84; it kept at this, maintaining its regularity during two days, and became insensible some hours before death.

The heat of skin which was at first considerable, became very moderate during the third and fourth days. The extremities became cold seven hours before death. The sweats which took place the first day offered nothing remarkable.

We did not observe any appreciable remission in the progress of the disease.

The drowsiness and prostration of strength which were manifested at the commencement of the attack, went on increasing continually. There was, however, great restlessness; the patient rolled from one side of the bed to the other, without being able to remain in any one place.

The face which was red and flushed the first two days, grew a little pale, then became purple, and from the third day assumed a contracted expression.

The prostration of strength had prevented my having recourse to general bleeding. The first day I applied thirty leeches behind the ears; and on the second day the same number to the epigastrium. The third day, blisters to the legs, and three spoonfuls of castor oil. It was after the exhibition of the oil, that the diarrhœa made its appearance.

Death took place at the close of the fifth day.

Examination three hours after death.—The body was still warm, and without rigidity;

fulness considerable; all the tissues presented a jaundiced appearance. From the scalp and dura mater oozed dark blood. The pia mater was every where, at the base as well as on the convex surface of the brain, injected with blood of a dark rust colour. The substance of the brain was firm and injected in the same manner. The ventricles contained two spoonfuls of serum.

The two lungs adhered to the pleuræ by some old adhesions. Both were crepitant, but their posterior portions presented black spots, which resulted from an infiltration of blood, which formed kernels such as occur in apoplexy of the lungs. The bronchiæ were filled with extravasated black blood, and their mucous membrane was also of a dark colour, in consequence of an infiltration of the same kind.

If the patient had lived a little longer, it is probable that she would have had a violent hæmoptysis.

The tissue of the heart was firm; the cavities contained dark blood, without a clot; no particular modification. The aorta and venæ cavæ also contained black blood, which was without a clot: their tissue was not coloured red.

The pleura and pericardium contained hardly a spoonful of serum.

The peritoneum contained no serum; the portion covering the intestines was very much injected.

The stomach was somewhat dilated, and contained two or three spoonfuls of a liquid bearing a close resemblance to old wine. This liquid gave to the mucous membrane a shadowing which was removed by washing: but the latter, notwithstanding, preserved a red colouring quite distinct from that which resulted from the imbibition: this coloration was general. The mucous membrane was not, however, softened; it was more frail, and yielded shreds which broke easily.

In the small intestines, there was no effusion of blood; but their mucous membrane was coated with a whitish mucus, and presented the same red tint as that of the stomach; it was frail, without true *ramollissement*.—The glands of Peyer were slightly injected, but were neither enlarged nor ulcerated. The glands of Brunner were not visible.

The large intestine offered the same appearance as the small.

The mesenteric glands were in their natural state. It was the same case with the spleen, which was consistent, and by no means of a large size.

The liver was of a deep reddish-purple colour, and distilled a great deal of blood; its tissue was neither softened nor otherwise modified. The gall bladder was unchanged, and contained a little bile deeply tinged with green.

The kidneys were filled with blood. The

bladder was contracted, but unchanged. The uterus was very much injected; but there was no effusion of blood into it.

CASE VIII.

I was called upon, on the 30th of January, by Dr. Lagrange, to make, with him, an autopsy of an American captain, who had died of yellow fever.

This man, who came last from Demarara, fell sick during the passage, four or five days before his arrival at Martinique. He was brought ashore by his own directions, and two days after, he died. He had had a high fever, pain in the head, icterus, and vomiting of black matter, but no diarrhœa.

The autopsy was made two days after death.

The lungs contained air, except at the posterior part, which presented patches infiltrated with dark blood. The bronchi were of a purple colour, but there was no blood effused into their cavity.

The heart was in its natural condition; its tissue was firm, and its cavities filled with dark blood. There was neither effusion into the pleuræ or pericardium.

The stomach was distended by about twelve or thirteen ounces of a black fluid, which was recognised to be blood, almost pure. Its mucous membrane was generally of a bright red, without any particular injection. It was fragile throughout, but not softened,—that is to say, that the shreds which we attempted to detach were of some length, but broke very readily.

The mucous membrane of the large and small intestines was in the same condition. It would have been pronounced to be an erythema of the whole membrane of the intestines. The glands of Peyer and of Brunner were not apparent. There was no effusion of blood into their cavity.

The liver was yellowish, like Spanish tobacco, and of the ordinary size and consistence. The gall-bladder was contracted in itself, and contained a little bile, which was thick, and of a greenish colour; its mucous membrane was natural. The spleen was a fourth larger than ordinary, but not softened.

The kidneys and bladder offered nothing remarkable. The brain was not examined.

Such were the anatomical lesions. It is seen that the modification of the liver holds the first rank: those of the stomach and intestines the next. All the organs were the seat of sanguineous congestion; but hæmorrhages were not as frequent as they have usually been said to be. The appearance of the blood evinced a great alteration. We repeat here, what we have already said, viz., that after death, as well as during life, we find nothing which should confound this disease with the typhoid fever of Europe.

(To be continued.)

TRANSACTIONS OF THE PATHOLOGICAL SOCIETY OF PHILADELPHIA.

January 6th, 1840.

The President, Dr. GERHARD, in the Chair.

Hypertrophy of the Heart—Aneurism of the Aorta—repeated attacks of Apoplexy—Pulmonary Apoplexy, &c.—Death—Autopsy. By C. W. PENNOCK, M. D.

E. Newport, a black woman, aged 50, was brought into the wards of the Philadelphia Hospital on the 18th of October, 1839, with hemiplegia. The right leg and arm were perfectly powerless, but without rigidity; sensation on the affected side greatly impaired, patient evincing pain only when pinching of its surface was very forcible; respiration slow, but unaccompanied by stertor; distortion of the face, the mouth drawn towards the left; apparently conscious of surrounding objects; voice unintelligible.

The treatment instituted consisted in free depletion by venesection, cupping the head, insertion of a seton in the nucha, exhibition of the active cathartics, (infusion of senna and sulph. magnesia.) Diet restricted to farinaceous articles. In the course of two weeks, a manifest melioration of symptoms took place; the voice became more distinct; memory somewhat improved; some intelligence; motion, which was first manifested in the great toe, was partially restored to the inferior extremity. At this time, Dr. Baker, the resident physician, ascertained from her, that her health had been good until four years before, at which time her catamenia suddenly ceased; she then became subject to cephalalgia, vertigo, and soon after, whilst walking in the street, fell, remaining without consciousness or motion for several hours, but recovered in a day, after free bleeding.

The attack which caused the hemiplegia, took place two weeks before her entrance into the hospital; it was preceded by pain in the head, vertigo, dimness of sight, and increased palpitations of the heart.

On the 7th of November, the patient presented the following symptoms: Expression of countenance dull; stupid; cheeks puffy, lips tumid, drawn towards the left side of the face, whilst the tongue is protruded slightly towards the right; voice very thick, pronunciation of words difficult. Right arm almost powerless, not rigid, falls as an inert mass when elevated; shoulder can be very slightly raised by deltoid muscle. In the right leg and thigh motion is partially restored, the leg can be flexed on the thigh, and this towards the pelvis. Sensation is restored to both limbs. Intelligence very dull and limited. *Digestive apparatus.*—Tongue moist, covered by thick, white fur; appetite moderate, no thirst; three alvine evacuations daily; abdomen resonant, soft, not distended, and not painful on pressure. Liver extends from the fifth rib to an inch

below the lower edge of right ribs; right hypochondrium distended more than the left.

Chest.—Marked prominence over the cartilages of right ribs and upper two-thirds of sternum, which are very salient; the space over the region of heart on left side also prominent. Ribs of right side almost immoveable during inspiration, whilst left chest is expanded. Percussion resonant immediately beneath acromial half of right clavicle; flat under sternal half, and beneath cartilages of right ribs; obscure, lateral and inferiorly. Posteriorly, the percussion is resonant above, obscure below. The left chest is resonant in space of two inches beneath the clavicle, and in the axilla; posterior percussion obscure in middle third, resonant elsewhere. Respiration over right side generally feeble, heard upon forced inspiration; it is bronchial near the sternum and over the posterior inferior third, accompanied by crepitant rhonchus. Respiration of left chest where it is resonant, is expansive, vesicular; dyspnœa; respiration thirty per minute.

Heart.—Marked circumscribed prominence over the region of the heart between the third and fifth rib, extending laterally from the sternum to the left nipple. The heart, measured by percussion, extends beyond the right margin of the sternum, nearly to the union of the cartilages with the ribs; lateral extent of its dullness on percussion beneath the second cartilage towards left, is four inches; under the third, five inches; under the fourth rib, six and a half inches, being one inch to left of the left nipple; this dullness extends over a space of which the outline coincides in shape with that of the pericardium. Perfect flatness on percussion exists in the præcordial space from the third rib downwards the length of the sternum; and laterally on the fourth rib, from the right edge of the sternum towards the left, four inches.

No respiration is heard in the præcordial space where the percussion is flat. Impulse of heart is very forcible in a space of two inches square near left nipple, and is followed by "the receding or back stroke" of Hope. Two sounds of the heart are heard in the region of the nipple—the first is a prolonged, rough, bellows sound, the second sound is exceedingly feeble, and is often masked by the roughness of the first.

Ausculting on the line of the fourth rib, towards the sternum, the first sound becomes shorter, clearer, and the second more marked; to the right of the sternum the second sound is nearly normal. Over the aortic valves, (sternum opposite the third ribs,) the first sound is rough, somewhat rasping; bellows sound in the second. The rasping sound is very intense immediately beneath the sternal half of right clavicle, at which point no second sound is heard; the impulse in this space is stronger than at the apex of the heart. Slight bellows sound accompanies the sounds of the heart as

heard over the valves of the pulmonary artery, (under cartilage of the second rib near the left side of the sternum.) Beneath the cartilage of the third rib, one inch and a half to the left of the sternum, (mitral valve,) first sound is more whizzing than it is over the aortic valves. Carotid arteries enlarged, beat with great violence, accompanied by a marked *bruit de soufflet*; pulse at the wrist very strong, incompressible, regular, sixty per minute; right radial artery of much greater volume than the left.

(*Treatment.*—Frequent blood letting, general and topical; administration of digitalis; purging by infusion of senna and sulphate of magnesia, every other day. Diet, oatmeal gruel.)

The symptoms continued with but little change until the 2d December, when the pulse at the wrist was observed to be much diminished in volume; this alteration was most marked in the artery of the right arm, which, instead of being, as previously, of the size of a rattan, did not appear larger than a crow quill; pulse still remained corded. Patient was ausculted almost daily; and the cardiac sounds were observed to vary in character over the left portion of the præcordial region, from a slight bellows to a deep rasping sound; this change would often come on during the examination. On one occasion it was markedly sibilant—no corresponding change was manifested over the aortic valves.

On sixth of December, profuse salivation ensued after exhibition of five grains of calomel, in divided portions of a grain each hour; patient complained much of the pain of the tongue, which was much enlarged. Next day, same complaint, disposition more irascible. On the 9th, tendency to stupor manifested, but aroused by questions; complains of no pain but of that of the mouth and tongue; deviation of the mouth towards the left, increased; decubitus on the right side. On the morning of the 10th, the day of her death, it was noted, that she was insensible to surrounding objects, except when roused by repeated questions; unable to protrude the tongue, which is red and swollen and dry; exudation of blood on mucous membrane of lips; right leg and arm perfectly motionless, no rigidity; sensation not impaired. *Chest.*—The anterior prominence beneath the sternal half of the right clavicle and the cartilages of the ribs, much increased, being most marked beneath the three upper ribs; the bulging of the præcordial region also greater. Dulness on percussion of the region of the heart observed over a greater space than at first note; beneath second rib, obscurity extends five inches; on a line with fourth rib seven inches; and beneath the nipple, to the cartilage of sixth rib. Impulse of the heart extends over a large space—it is strong at, and below the nipple: it is also very perceptible, both to the eye and touch between second and third left cartilages, where a marked quivering motion

(*fremissement*) attends it. The impulse, however, over the prominence beneath the right clavicle greatly exceeds that of the heart. The first sound only, is heard at the left nipple and in the axilla—it is strongly whizzing, sometimes rasping; near the sternum, on the line of the fourth rib, both sounds are heard; *saw sound* exists over the aortic valves. Along the right upper margin of the sternum, between the clavicle and second rib, the first sound alone heard, and is intensely rasping. Over the mitral valve, first sound is whizzing, similar to that heard at the apex.

Respiratory sounds are greatly masked by those of the heart, and aorta—the respiration on the right side is tubal beneath the acromial extremity of the clavicle; feebly bronchial with fine crepitus posteriorly. *Left Chest.*—Respiration in upper fourth very feeble, but vesicular; on lower half posteriorly, fine crepitus. The respiration is difficult, but is not accompanied with stertor.

Arteries throughout the body, with the exception of those of the arms, beat with great force—pulsation of the radial arteries of very small volume, and corded.

Death took place six hours after this note was written.

Autopsy, thirty hours after death.

No infiltration into the cellular tissue; slight emaciation.

Cranium.—Effusion of blood into the muscles beneath the scalp; very firm adhesion between the dura mater and the skull at the summit of the left hemisphere. The left hemisphere of the brain is smaller than the right, its convolutions being flattened, whilst those of the right are full and convex; the sinuses and blood vessels of the meninges greatly engorged. On the summit of the middle lobe of the left hemisphere a depression of one inch in length, by one-fourth of an inch in breadth and depth, exists in one of the convolutions; the parietes of this cavity are softened, of a straw colour, and the pia mater dipping into it is of a bright arterial redness, its capillaries much distended and innosculate freely. Arachnoid covering left hemisphere thickened, opaline: numerous gray granulations seen along the left margin of the longitudinal fissure, and on the posterior lobe of the cerebrum. Cortical substance pale, not softened on the convex surface, except at the depressed point. At the base, arachnoid thickened, opaque, especially on the left, near the pons variolii, where the cortical substance is slightly softened. Medullary substance firm, not injected; ventricles contain each about 3ij of bloody serum.

Cerebellum normal, with exception of thickness and opacity of tunica arachnoidea.

The arteries of the brain are partially filled with dark blood; their tunics are thickened by numerous cartilaginous patches beneath the serous coat.

Chest.—Heart. Upon opening the chest, the heart is found to coincide with the percussion during life.

Pericardium contains half an ounce of reddish serum; no adhesions with the heart; is generally of dull white appearance, but without any raised patches upon its surface. The heart, more globular than natural, measures, after being partially emptied of blood, twelve inches in circumference. It contains in its cavities firm fibrinous coagula, which are elastic, tinged with blood, and adhere firmly to the muscular tissue. Right auricle and ventricle much dilated,—would contain a goose egg. Walls of ventricle measure in the middle, exclusive of columnæ carneæ, which are hypertrophied, five lines; at the base and apex, three lines. Left ventricle slightly dilated; walls much thickened,—measure in the middle, exclusive of the columnæ, one inch four lines—at the apex six lines—at the base nine lines. Left auricle more dilated than ventricle; muscular tissue of both auricles hypertrophied; parietes of the left, three lines in thickness. Endocardium of left ventricle and auricle thickened, opaque; mitral valves double usual thickness, with cartilaginous patches upon the anterior valve; circumference of the auriculo-ventricular orifice three inches nine lines. Tricuspid valves flexible, transparent, not thickened; circumference of right auriculo-ventricular orifice four inches six lines; the valves do not entirely close the orifice, and would allow regurgitation. Circumference of pulmonary artery at the semilunar valves three and a half inches; valve is very slightly thickened in points, but is perfectly flexible. The aorta at its orifice is three inches in circumference; all of the aortic semilunar valves contain patches of cartilaginous deposit,—that which is nearest the anterior margin of the mitral valve has its cardiac surface much roughened from an ossific deposit in the sinus of Valsalva. Immediately above the valves the aorta becomes contracted by a cartilaginous deposit beneath the serous coat, its circumference at this point being two and a half inches. The artery above this dilates, and at the summit of the arch measures four inches in circumference,—opposite the innominate, the circumference is three inches,—and a little beyond, in the descending aorta, two and three-quarter inches. The internal surface of the artery, rough from ossific and cartilaginous patches. The innominate and left subclavian arteries, are dilated at their orifices, but are partially filled by the fibrinous coagula formed in the dilated sac of the aorta.

Lungs.—Strong adhesion of right lung to the ribs; no effusion into chest. Middle and lower lobe much distended, very heavy, containing numerous black masses of variable size, terminating by abrupt margins; these masses are friable, not hepatised, and sink in water. Bronchial tubes dilated, mucous mem-

brane much injected and thickened. Upper lobes of both lungs crepitating on pressure; margins full and rounded from dilated vesicles. Lower lobe of left lung splenitised, and contains a few apoplectic nodules.

Liver smaller than usual, very heavy, firm, resisting the knife; large vessels congested; yellow acini much developed; bile abundant in gall bladder, dark colour and tar-like consistence.

Stomach.—Mucous coat of stomach dark gray colour, thickened; pyloric orifice diminished by scirrhus induration. Nothing remarkable in the other viscera, except ecchymosis on mucous coat of small intestines.

Remarks.

The point of the greatest interest in this case, is the connection of the cardiac disease with the repeated apoplectic attacks. In the first instance, all the symptoms were very evanescent, lasting but a few hours; thus proving that the suspension of motion and consciousness must have been the result of congestion of the blood vessels of the brain, unattended by any effusion upon that organ. The second attack was of far more serious character—the paralysis continuing after very energetic treatment had been adopted. Gradually, sensation is restored, improvement in motion is manifested, but before the entire use of the limbs is regained, a third attack of paralysis takes place, and death ensues. Disease of the heart had preceded the apoplectic tendency, and had increased until unequivocal signs of hypertrophy, valvular disease, and aneurism of the arch of the aorta were manifested.

The character of the cerebral lesion is interesting. Notwithstanding the perfect hemiplegia, no effusion of blood could be detected in the brain. A small depression on the summit of the left hemisphere, indicated that an effusion had existed at a previous period, and the flattening of the convolutions may be attributed to a similar cause. But, since no effusion existed to explain the cause of the last paralysis, to what can it be imputed? It was observed some days previous to death, that the pulsations at the wrists were comparatively feeble, whilst the carotid arteries beat with great force; the cause of the phenomenon was explained, upon making the post mortem examination, by the presence of coagula, at the orifices of both subclavian arteries, by which, in a great measure, the arterial blood was prevented reaching the arteries of the arm, and was driven with great force to those of the brain. This organ, we have reason to believe, had not entirely recovered from the lesion occasioned by a recent attack of apoplexy—the convolutions of the left hemisphere were depressed by the effects of the hæmorrhagic effusion. Under these circumstances, might not the violent action of the heart, by forcing an abnormal quantity of blood into the brain, greatly distend the arteries, engorge the veins and

sinuses, and thus produce upon the hemisphere, atrophied by previous disease, all the effects of apoplectic hæmorrhage?

The whizzing sound accompanying the systole of the heart, and which was heard over the left portion of the præcordial region, seems to have depended upon regurgitation of blood through the mitral valve, inasmuch as it was always heard loudest over that valve, varying under circumstances when the circulation became irregular, whilst no corresponding change was observed over the aortic valves.

Over the dilated aorta, the first sound only was heard, although both sounds existed at the aortic valves.

BIBLIOGRAPHICAL NOTICE.

Elements of Pathological Anatomy, illustrated by numerous Engravings. By SAMUEL D. GROSS, M. D., late Professor of General Anatomy, Physiology, and Pathological Anatomy, in the Medical Department of the Cincinnati College. In two volumes. 8vo. pp. 518, 510. Boston, 1839.

WE have no better evidence of the importance attached to the study of pathological anatomy as an aid to diagnosis and treatment, than the publication of these volumes. Much as this department of science has been cultivated in the United States, but a single work has been written expressly upon the subject, that of Dr. Horner. This contains much excellent matter, but is scarcely a complete treatise; nor are the European publications at all adequate to supply this deficiency. Andral, and other writers upon the subject, have published valuable works, replete with facts, but still not complete in themselves, nor competent to answer many questions which the student in pathology is obliged to ask. The best of these works is undoubtedly that of Dr. Carswell; but this is rather an earnest of what the author is capable of doing, than a finished production: it is invaluable for its illustrations, and the admirable descriptions of particular lesions, but not sufficiently extended to admit of the study of the lesions of the organs as connected with the functions of life. Dr. Hope's work is nearly similar to that of Dr. Carswell; it is more extended, but less perfect in its kind.

These works are not all within the reach of the American student: the expense of some of them, the rarity of others, render them nearly useless for purposes of every day inquiries.

We are not disposed to discuss the question

of the utility of pathological anatomy. That it may be, and sometimes is abused,—that conclusions are drawn from it to an unwarrantable extent, no one can deny; but that, under proper restrictions, it is a most useful instrument—a most efficient explorer of concealed mischief, giving clearness to our ideas, and a just conception of the disorder caused by diseased action—no reflecting mind can doubt. The reason of the causeless neglect of pathological anatomy by many physicians, is extremely plain. It is a troublesome, often a disgusting pursuit; it is incompatible with the occupations of some physicians, and shocks the indolence, or the extreme sensitiveness of others. But it is neither just, nor consistent with a generous devotion to science, to undervalue, and affect to despise a laborious method of investigation, which is not the ultimate object of medical science, but is an invaluable assistance in our progress, and contributes largely and surely towards this end.

Dr. Gross is already well known as the author and translator of several works of merit and research. Circumstances favoured the cultivation of pathological anatomy, to which he has sedulously devoted himself for some years. The facilities at his command, if somewhat limited, have been much increased by the aid of his professional brethren; and he has well availed himself of these advantages, by a careful examination of the lesions of organs, and collection of the observation of most writers upon pathological anatomy. With the additions to this subject made by American writers, he is not so familiar. It is, however, difficult to incorporate in a work of this kind, the scattered facts and notices which must be gathered from journals extending through a long series of years; and the inductions and critical research of the author are so very creditable to his erudition and love of truth, that we would not notice his trivial omission in an uncharitable spirit.

The leading characters of the work, taken as a whole, are, that it is clearly written, systematic, correct, and more complete than other works upon the subject. Its defects are, that it is occasionally incorrect in its pathology, and does not sufficiently point out those changes which are evidently the secondary lesions of disease, occurring late in its course, and often remaining after the morbid action has ceased.

It is true, that a work on pathological anatomy cannot be required to embrace the whole history of diseased action; but it should include so much of it, as may prevent the student from confounding the lesions of organs with diseased functions, the essential alterations of disease, with those that are accidental and irregular. Dr. Gross has done something towards this, but he has not done enough for the student; the chance of error, in this respect, should be avoided,—for the only objection against pathological anatomy which has the shadow of an argument, is, that when imperfectly studied, it may tend to confound two distinct things—morbid action and morbid effect.

Our readers will perceive, by an analysis of the work, that these criticisms weigh very lightly in the balance against the merits of the work: its accuracy and comprehensive character place it amongst the most valuable additions to medical literature.

A systematic treatment on pathological anatomy is naturally divided into two parts,—one treating of the lesions in an abstract manner, without especial reference to particular organs; and the second containing the examination of the diseased organs themselves. This mode Dr. Gross has followed. After treating of inflammation, he describes its consequences—the effusion of serum, lymphization, suppuration, hæmorrhage, softening, gangrene, ulceration, granulation, cicatrization, induration, hypertrophy, atrophy. Under separate chapters he includes the heterologous transformations, hydatids and serous cysts; all of them he is disposed to attribute to inflammation, properly speaking, or to mere modifications of this action,—that is, to inflammation modified by a peculiar diathesis of the individual.

The heterologous formations, (to use the term which Dr. Gross has adopted, including tubercle, melanosis, scirrhous, encephaloid, and the other products known under the name of cancer,) are, of course, treated of in a distinct chapter: of these, the most frequent is tubercle. The cellular tissue is the one primitively affected,—the mucous, however, nearly as often, Dr. Carswell believes more frequently than any other; but in this respect our views coincide with those of Dr. Gross. The relative frequency of tubercles is compiled from the tables of Drs. Louis and Lombard, which determine the fact that tubercles in adults are much more

frequent in the lungs than in any other organ; in children nearly as frequent, but rather less so than in the bronchial glands. The chemical analysis of tubercle, according to Hercht, consists of nearly equal parts of albumen, fibrine, and gelatine. Dr. Gross reconciles this statement with the analysis of Thenard and others, who have detected a large proportion of earthy salts, by the simple fact that this product varies extremely at different periods of its growth. It is, in fact, just as absurd to speak of the analysis of tubercle without reference to its period, as it would be to describe the bone of the fœtus as chemically identical with that of the adult. The tuberculous matter is found in several forms,—the miliary, encysted, infiltrated, and stratiform,—the latter being the variety in which it is deposited upon the surface of membranes. The connexion of tubercle, in its forming stage, with hydatids, is evidently erroneous; but what, then, is the nature of the process by which they are secreted? Dr. Gross ascribes them to inflammatory action: with this opinion our own coincides under some circumstances.

This subject we have studied with extreme care, and lay most stress upon our examinations of tubercles of serous membranes, because in these situations the process may be very accurately traced from the transparency of the tissues, and in the same parts the deposit of this substance is evidently most rapid and acute. In these membranes, particularly in the pleura and peritoneum, the tuberculous matter is deposited in small grains, which are surrounded by a distinct ring of vessels filled with bright arterial blood. The vessels seem to be supplied by others which radiate from, or rather towards the ring. There is no trace of red vessels in the tuberculous granulations themselves, even when examined by the aid of the microscope. The nutrition is then either by a process of inhibition, or by vessels carrying only the transparent fluids. The yellowish tint of the tubercles in jaundice is mentioned by several writers; this is regarded by Dr. Gross as a proof of the organization of tubercles. In the tubercles of the liver the same tinge always exists; a fact, we believe, not before mentioned,—but from the examination of a large number of tuberculous children, we have ascertained this with great certainty.

The process of softening of tubercles, is still

almost a mooted point. Dr. Gross explains it by the irritation set up in the surrounding tissues from the presence of the tubercle as a foreign body,—this is transmitted to the tubercle itself, which, possessing an inferior vitality, soon breaks down into a substance closely analogous to pus. A portion of the softened mass undoubtedly consists of nearly pure pus. This explanation is nearly satisfactory. There is, however, a process of rapid softening, which is closely analogous to gangrene, and begins at the centre of the tubercle. Even this process must require a percolation of fluids through the mass, although there is no distinct circulation, nor any proper inflammatory action. The discharge of the softened tuberculous matter, by ulceration, into the adjacent mucous tubes, is well known. The transformation of some tubercles into a dry, concrete, earthy mass, is alluded to by Dr. Gross but slightly.

Melanosis, another of these anomalous products, is described in its three varieties—the tuberoid, lamellated, and dot-like. It is more indolent, and less inclined to soften and discharge itself by ulceration than tubercle.

Scirrhus is defined, by our author, to be “a hard, crisp, opaque substance, of a lightish gray colour, with dull yellowish fibrous inter-sections, organized, liable to lancinating pain, occurring for the most part after the middle period of life, and passing sooner or later to ulceration.” In the tuberoid variety, the morbid substance is deposited in the form of nodules in the interstitial cellular tissue of organs: when diffused through the parenchyma of organs, Dr. Gross considers the term identical with the lardaceous tissue of the French, in which the whole tissue becomes like lard. Scirrhus softens much like tubercle, and ulcerates, forming, as is well known, a troublesome sore. At this period, only, the disease is attended with much pain. Dr. Gross regards scirrhus as caused by inflammatory action. In some cases of diffused scirrhus of the hollow viscera, especially the stomach, this is evident; but in other situations the tuberoid scirrhus is not evidently connected with inflammation,—on the contrary, it is evidently a deposit from the blood, arising from a peculiar alteration of this fluid.

The term encephaloid is used with some extension of its usual signification. He classes under this title the various diseases known some-

times under the generic appellation, soft cancer. These are medullary sarcoma, fungus hæmatodes, soft cancer, medullary fungus, and spongoid inflammation. The term encephaloid is usually restricted to one variety of these diseases; and, in this respect, we think the ordinary classification better than the nomenclature of Dr. Gross. It is very evident that the term encephaloid is applicable only to that variety of the disease which is closely analogous to brain in its structure, and even in its chemical properties: while the term soft cancer includes every variety, however unlike they may be in composition. The dependence of encephaloid upon a general morbid diathesis, and not on local inflammation, is admitted by Dr. Gross.

The study of special pathological anatomy is appropriately introduced by the morbid alterations of the blood. The author has given all that is positively known upon the subject, but we are constantly compelled to regret the barrenness of his materials. Strange to say, evident as are the alterations of the blood, we are able to say little more respecting them than that the quantity of fibrine and of red globules is increased in inflammatory diseases, diminished in anemia, and all morbid conditions in the nutrition is affected,—while in many cases of poisoning, and in some malignant fevers, the crasis is broken down, and the colour of the venous and arterial blood is much darker than usual. The fatty serum, and dark whey-like serum, are conditions occurring in inflammation, particularly those connected with a morbid nutrition.

The tissues of the body are subject to the diseases already alluded to, which give rise to various alterations, according to the structure in which they are seated; hence Dr. Gross has very properly taken up the consideration of these alterations before proceeding to the lesions of particular organs. This portion of the work is remarkably complete, especially that relative to the diseases of the skin, which includes a complete classification of these disorders.

After the pathological anatomy of the tissues, the author passes to the lesions of the brain and its envelopes, including, of course, meningitis. His description of this disease is somewhat less satisfactory than other portions of his work, especially those relative to the

pathology of the tissues. Of the variety of disease known under the name of tuberculous meningitis, he has given no complete description: this is the acute hydrocephalus of young children, and arises from an inflammatory disease of the membranes of the brain, connected with a deposit of tuberculous granulations. There are usually more or less evident alterations of the brain itself, and effusion of serum into the ventricles, or beneath the arachnoid. These lesions modify more or less the symptoms of the disorder; but in the essential part it is still the same,—that is, a tuberculous disease. In nearly every case the nature of the disorder is rendered more evident by the appearance of tubercles in other organs than the brain.

Under the morbid anatomy of the lungs phthisis is included, although this disease is so extended in its action that many organs, besides the lungs, are more or less involved. These are well described by Dr. Gross, who has availed himself of the numerous additions made of late years to our knowledge of this subject.

The inflammation of the pericardium is accurately described: the symptoms of the disease are also given, but with less clearness than could have been desired. The endocardium, which is so frequently the seat of inflammation, and gives rise to many chronic diseases of the valves of this organ, is rather overlooked; its alterations, and their terminations, are not described as accurately as the importance of the disease requires. The additions to our knowledge of heart diseases depend mainly upon the more perfect acquaintance with the alterations of the endocardium.

The gastric and abdominal viscera are so important in their connexions with the system in general, and so subject to various marked changes, that they necessarily occupy a large place in a work on pathological anatomy. The descriptions are good, and as complete as in other portions of the work. The defect lies rather in the pathology, than in the morbid anatomy. The subject of the lesions of the follicles of the small intestines naturally belongs to this portion of the work; and its connexion with typhoid fever is necessarily alluded to. The author has done justice to the labours of the French pathologists in this respect; but he has not stated that the question

of the distinction between the typhus of the English writers, and the typhoid fever of the French, has been settled by the investigations of the two diseases at the Philadelphia Hospital. Both of these diseases may exist at the same time,—but their progress and symptoms are quite as different as those of measles and scarlet fever; and in the one there is disease of the follicles of the small intestines, while in the others these bodies are perfectly normal.

Typhoid fever is sometimes latent: of this an interesting case occurred at Cincinnati, which is mentioned by Dr. Gross. Death occurred from perforation, in consequence of the ulcer seated near the ileum, and in all probability dependent upon a disease of a gland of Peyer. This case is mentioned as ulceration of the ileum.

The description of the other lesions of the stomach and small intestines is highly interesting, from its variety and accuracy, and may be consulted with great advantage by the practitioner.

The colon is a frequent seat of inflammation and ulceration, like the small intestine, and certainly recovers, as well as any other portion of the alimentary canal, from these alterations. Dr. Gross believes that “it is a singular fact, and one for which he cannot offer any satisfactory explanation, that ulcers of the large bowel are much less liable to cicatrize than those of the small. Never, indeed, in a single instance, have I seen complete reparation in this situation, though it has occurred to me on several occasions to notice partial efforts of this sort.” This error of Dr. G. has evidently arisen from his confounding tuberculous ulceration, in which the follicles contain tuberculous matter, which softens and is discharged, with ordinary acute inflammatory ulcers. In the former variety, it is true, complete reparation is very rare,—in the latter it is exceedingly frequent. This error was very natural for one who has chiefly examined the bodies of patients in private practice, in which it is extremely difficult to investigate the alterations of the mucous coat of the bowels in a satisfactory manner. But we have very often seen, in hospital practice, every stage of cicatrization of the large bowel, from the first subsidence of the edges of the ulcer, to the smooth, shining cicatrix. A number of these patients died of various chronic diseases, many months after their re-

covery from some dysentery. In process of time the cicatrix becomes gradually less and less visible, and the newly-formed mucous coat scarcely differs from the inguinal tissue. In all cases these cicatrices are less puckered than in other portions of the bowels, and therefore more difficult to recognise.

An excellent account of intestinal worms will be found in the work; and of the descriptions of the lesions of the peritoneum we can also speak in terms of unqualified praise.

The lesions of the liver are, it is well known, extremely common. But they may be classed under a few heads. Inflammation and its terminations, including suppuration, hypertrophy of the acini, with change of colour, known under the name of cyrrhosis and atrophy. These all result from acute or chronic inflammation, or at least chronic irritation. The hypertrophy of the whole organ depends sometimes upon chronic irritation, at others upon a peculiar diathesis. The tuberculous and cancerous formations in the liver seem to be totally independent of any local cause. All these lesions are described briefly, but with clearness and accuracy.

The few lesions of the spleen and pancreas occupy but small space, the induration of the spleen in chronic intermittent, and its softening in intermittent, as well as other fevers, are its chief disorders. These alterations do not seem always to depend upon inflammation, to which they are referred by Dr. Gross. In some cases, at least, the softening depends upon the altered condition of the blood.

The kidneys are regarded as directly connected with certain pathological states of the system, since the publication of Dr. Bright's researches upon the granular disease of the kidneys,—a frequent cause of dropsy. This condition is, with reason, regarded by our author as closely analogous to cyrrhosis of the liver. The acute inflammation of the kidneys, and its calculous deposits are well known.

The male organs of generation are the seat of many alterations, which receive their due share of attention, with one exception, the chronic inflammation of the vesiculæ seminales; a condition which not unfrequently gives rise to diurnal or involuntary discharges of semen, and often indirectly undermines the health. This condition is described by Pro-

fessor Lallemand, who has probably attached an exaggerated importance to it.

The female organs of generation are treated of in the concluding chapter of the book. Their alterations are frequent, but for the most part extremely simple; they are noticed by Dr. Gross, without entering into the minute details of the slighter lesions.

The work is illustrated, by nearly one hundred excellent wood-cuts, and a coloured engraving of the inflamed mucous membrane of the alimentary canal. The illustrations are therefore as abundant as is compatible with a price which would put the book in the hands of the profession in general. It deserves an extended circulation, not only for its own merits, but because no other work, now in the hands of the profession, can supply its place. In proportion as medicine is regarded as a comprehensive science, it will be necessary to observe the alterations of structure, as well as the deviations of the functions from a healthy standard. No evil can result from a thorough knowledge of pathological anatomy, although a superficial acquaintance with the subject may lead to error. We have spoken in high terms of the work of Dr. Gross, because it possesses real and durable excellencies; these form the leading characteristics of it. Its omissions and errors are so limited in number that we have had little difficulty in pointing out all those which are of much importance. To a certain extent they are inevitable in so comprehensive a work, but some of them would doubtless have been corrected, if the author had been able to publish the work under his immediate revision. As it is, they do not impair the character of the work, or prevent it from ranking among the standard productions of medical literature.

The American Medical Almanac, for 1840, designed for the daily use of practising physicians, surgeons, students, and apothecaries. Being also a Pocket Memorandum and Account Book, and General Medical Directory of the United States and the British Provinces. By J. V. SMITH, M. D., Editor of the Boston Med. and Surg. Journal. Boston, 1840: 18 mo., pp. 152.

By some accident, this work has just reached us. It contains an immense amount of

useful information to the physician. The undertaking is still novel, this being only the second year, and cannot, therefore, be regarded as a fair test of the future correctness of the work. In a subsequent edition we have no doubt that some errors and omissions which have crept into the present one, will be avoided. We allude particularly to the account of the institutions at Philadelphia. At the same time, we think it but justice to the author to state that a portion of them would have been avoided, if the information which he had expected, had been forthcoming at an early period. We can promise our aid in preventing a similar deficiency in future editions, which we have no doubt will be regularly called for.

DOMESTIC SUMMARY.

Observations on Dextrine and Diastase.

By WILLIAM PROCTER, jr.

(Concluded.)

By scrutinizing the foregoing remarks, we will observe a great confusion of names, indeed almost as many sets of names as we have experimenters on the subject. There is evidently an analogy between some of the results, and the probability is, that the amidine and soluble amidin of Guérin, taken together, constitute the amidone of Payen and Persoz, as both amidine and amidone, colour blue with iodine, and both are obtained without the use of any other agent but water and temperature. The matter of amidone which causes it to swell, may be a tissue-like substance, which, when separated by ebullition, etc., constitutes the soluble amidin held in solution by amidine of Guérin.

I think we may safely differ from Raspail, who considers the dextrine by sulphuric acid of Biot, to be the soluble substance of fecula. Dextrine when obtained in that way, as well as by diastase, gives a vinous red or purple hue with iodine, while the substances which are derived directly from fecula by water give a sky blue.

Raspail says, that all, save the teguments of fecula, is soluble substance, an assertion which is not borne out by fact, for we find that amidone is not soluble.

He also asserts, that diastase is soluble gluten, or gluten held in solution by acetic acid. Wishing to test the truth of this assertion, some gluten was prepared and dissolved in acetic acid. This, then, should possess the power of diastase. Two drams of fecula were mixed with two ounces of water, and as much solution of gluten as equalled two or three grains of the undissolved substance was introduced along with it, and the temperature raised, expecting to see the reactions peculiar to diastase,

but was somewhat disappointed when the mixture became gelatinous and exhibited no signs of alteration. At this crisis half a grain of diastase was added, dissolved in a very minute portion of water; the mixture in a very short time was sufficiently fluid to filter. If the acetic acid solution of gluten was prepared correctly, and there is every reason to believe that it was, this assertion of Raspail proves incorrect.

Raspail also asserts, that diastase and sulphuric acid possess no power of rupturing the envelopes of fecula, but that it is due to the water and temperature. To ascertain how far this was correct, 240 grains of fecula, about 1000 grains of water, and half a grain of diastase, were mixed together, and heat gradually applied. At the temperature of 150° Fahr., the mixture had a gelatinous consistence owing to the rupture of the envelopes, and the liberation of the interior substance. Again; the same quantities of fecula and water were mixed together *without* the diastase, and the temperature raised as before. At 150° Fahr., the mixture becomes gelatinous as in the other case. To this one-third of a grain of diastase mixed with half a dram of water was added, and the whole stirred together. In a very short time, the mixture lost its jelly character, and was quite fluid. From this it may clearly be inferred, that water and temperature, as has been said by Raspail, are *really* the agents which rupture the envelopes. It may be well to remark, that the jelly of that in which diastase was used, was not so thick as the other, which may be traced to the immediate action of the diastase on the first portion of broken granules.

Preparation of Dextrine.

First, by sulphuric acid.

The proportions recommended by different chemists are exceedingly variable, as are the processes. Berzelius directs,

Fecula	50 parts,
Acid	20 "
Water	139 "

Mix the fecula with one-half of the water, and the acid with the other; first heat the diluted acid, and add the fecula and water, in small quantities at a time, then raise the temperature to ebullition, and keep it there a few minutes. Afterwards saturate the acid with marble dust; filter, and evaporate carefully to dryness.

Thenard* says, take one hundred parts of fecula, twenty-eight of water, and twenty of acid, which is evidently a mistake, as the quantity of water is entirely too small. The dextrine obtained by the process of Berzelius is very soluble in water, and colours vinous red with iodine. According to M. Thinus, (Journal de Pharm. tome xx,) the following are the most eligible proportions:

* *Traité de Chimie*, tome iv. page 371.

Fecula	50 parts.
Acid	10 "
Water	600 "

I have used these proportions in preparing it, and found them to answer very well; mix the fecula with one-half of the water, and the acid with the other, and apply heat, taking the precaution to keep the mixture in constant agitation, at 150° or 160° Fahr., the whole becomes a jelly, which gradually becomes more fluid, until the temperature arrives at 196°. Keep the mixture at this degree for some minutes, and then allow it to stand twenty-four hours, when it is to be filtered. On adding an excess of alcohol to this solution, the dextrine is precipitated in a flocculent state, which aggregates in a cohesive mass. Thus obtained, it retains a small quantity of sulphuric acid, mechanically, which by re-dissolving in a small quantity of water, and again precipitating, yields the dextrine pure.

This process might be altered so as to saturate the acid with marble dust, and evaporate the solution to dryness, after filtering.

2d. A much easier, and more eligible process is that in which diastase is used as the agent. The following proportions have yielded a satisfactory result, viz:

Diastase	1 part.
Fecula	400 "
Water	1200 "

Dissolve the diastase in the water, then add the fecula, and raise the temperature gradually, stirring the mixture constantly. At 150° the whole becomes a mass of thick jelly, which liquifies entirely between 150° and 160° Fahr. When this has taken place, raise the temperature of the mixture rapidly to ebullition, which suspends the action of the diastase on the dextrine. Floating through the liquid is seen a flocculent substance, which is composed of the empty teguments, upon which the diastase has no action. After the liquid has cooled, filter it, and either precipitate with alcohol, or evaporate carefully to dryness. The advantage of using the alcohol is the separation of the sugar, which invariably attends the action of diastase.

I think that we may draw from the foregoing exposition the following conclusions, viz.:

1st. That fecula consists of teguments, which envelope a peculiar substance of a spongy character, which is either one uniform matter, or composed of a soluble and an insoluble substance united.

2d. That dextrine, or gum of fecula, is always a product of art, and is derived from the interior substance of fecula, by the action of different agents.

3d. That diastase and sulphuric acid, and other agents, that are thought to exercise the power of rupturing the envelopes of fecula, do not really possess that power, but the water and temperature cause them to be ruptured, and then these agents act on the interior substance,

and convert it into dextrine and sugar of amidon, thus destroying the gelatinous consistence of the mixture.

4th. That diastase is not soluble gluten, as asserted by Raspail, but is a substance enjoying the power of converting the interior substance of fecula, first into dextrine, and afterwards into sugar of amidon.—*Am. Journ. Pharm., Jan. 1840.*

FOREIGN SUMMARY.

VELPEAU'S CLINICAL LECTURE ON OPHTHALMIA.

No. XV.

Non-existence of arthritic or rheumatic ophthalmia as a specific disease.

Arthritic Ophthalmia.—As authors do not seem to care much about this form of specific ophthalmia, I shall only make a few brief remarks respecting it. I am myself perfectly convinced that what has been denominated arthritic ophthalmia by ophthalmologists is nothing else but iritis or choroiditis, or these two affections combined. My opinions on this subject are not formed *à priori*; they are the result of long-continued and attentive observation of disease. I have, it is true, sometimes seen the symptoms which are referred to this supposed specific form of inflammation in gouty patients, but I have much more frequently met with them in those who had never had that malady. Within the last three months, we have, as many of you well know, recognised these symptoms in at least twenty patients of all ages and of both sexes, and yet not one of them had ever been affected with gout, or even knew what the word meant. May we not also ask whether gout is a specific disease? This is a question which has not hitherto been satisfactorily answered, and yet the specific nature of gout ought certainly to be determined before we can rationally be called upon to recognise an arthritic form of ophthalmia.

The principal symptoms which are given as indicating arthritic ophthalmia are the following:—The vascularization, which is formed by vessels larger and more tortuous than in the other specific forms of inflammation, is separated from the cornea by a grayish or bluish ring or zone, about half a line in width. The sclerotica is of a deep blue or violet colour, the iris of a grayish or dirty yellow. This latter membrane appears as if it had been macerating in some fluid; and the pupil, losing its regularity of form, becomes elliptical transversely. The pain is acute, and resembles that of neuralgia.

On analyzing these symptoms, you will find that they are merely those which I described when speaking of iritis, together with some others which are referred by authors to inflam-

mation of the choroid membrane. The increased size of the injected vessels does not depend on a gouty diathesis, but on their having become slightly varicose, and is merely a consequence of the inflammation. The blue tinge of the sclerotica shows either that the choroid membrane is inflamed, or that the sclerotica being thinner than usual, its colour is slightly modified by that membrane. This we see frequently in children, in young people of a lymphatic habit of body, and in those who are affected with hydrophthalmia. Lastly, the changes which take place in the colour and in the form of the iris, are symptoms of the inflammation of that membrane. I need not, I think, say any thing further on the subject; these considerations are quite sufficient to authorize our definitively setting aside arthritic ophthalmia.

The specific forms of ophthalmia which we have yet to examine, being those to which ophthalmologists attach the greatest importance, must be studied with care. Before, however, I enter into any details respecting the rheumatic and scrofulous forms of ophthalmia, I have a few observations to make which are of some importance.

The existence of these two specific forms of ophthalmia cannot rationally be recognised unless it be first proved that scrofula and rheumatism are really specific diseases. But, has this been done? has science come to a definitive conclusion with regard to the nature of these affections? I do not myself believe that it has; I think, indeed, that their nature is still unknown, and that their history requires revising entirely. This, however, I cannot attempt for the present, as the details into which I should be obliged to enter would lead me too far from the subject we are now discussing. I will merely observe that, in my opinion, scrofula and rheumatism only differ from other diseases by the constitution of the patient, and by the nature of the tissue which is the seat of inflammation. How, if I am correct, is it possible that they should always exercise such influence over inflammatory affections of the eye as to cause them to assume specific characters? To speak of the symptoms which are drawn from the vascularization only, how can we understand that the blood-vessels of the eye, the distribution of which is the same in every individual, should be injected in one manner in a scrofulous subject, and in another in a rheumatic subject? I must confess I cannot see how there can be any difference. I am quite willing to allow that rheumatism or scrofula, co-existing with an inflammatory affection of the eye, exercises more or less influence over that affection, as it would likewise over any other inflammatory disease; but I consider it absurd to assert, as it has been done, that a patient is rheumatic or scrofulous merely because the ophthalmia by which he is attacked presents certain characters, although he him-

self may offer no symptom whatever of either one or the other of these affections.

Rheumatic Ophthalmia.

This is one of those forms of special ophthalmia which are the most frequently alluded to by ophthalmologists. M. Sichel, in the description he gives of "rheumatic ophthalmia," says that its principal seat is the sclerotica, aponeurotic expansion of the muscles of the eye, and that portion of the conjunctiva which covers the cornea. He also says that in some instances it attacks the membrane of the aqueous humour, and the serous layer which lines the anterior surface of the iris.

In the first stage of the malady the sclerotica becomes slightly vascularized, the conjunctiva remaining healthy. The vascularization of the sclerotica is formed by numerous small vessels which run parallel to one another, are perfectly straight, of a pale carmine colour, and, converging as they approach the cornea, terminate at about the distance of a line from that membrane. At a later period the redness becomes deeper, and the injected vessels extend so as to form a zone which occupies a considerable portion of the sclerotica. At the same time, a second vascular layer becomes visible, constituted by more superficial and more voluminous vessels than the one we have just described; these vessels are moveable, follow a tortuous course, appear of a yellowish red colour, and evidently belong to the conjunctiva. These two vascular layers form round the cornea a double injected zone, the appearance of which is often followed by chemosis. The dread of light and effusion of tears are very intense. At a still more advanced period of the disease the portion of the conjunctiva which lines the external edge of the cornea becomes covered superiorly and inferiorly with small red streaks. The free margin of the eyelids is also often sympathetically affected, and assumes a bluish red tinge. If the inflammation does not abate, it sometimes extends to the corneal conjunctiva, which then becomes more or less vascularized, and presents a milky white appearance; the vessels which give rise to the vascularization seem to communicate with those of the conjunctiva. When this is the case sight is always more or less impaired, indeed sometimes it is entirely lost.

Ophthalmologists also speak of a "rheumatic keratitis," which presents, they say, the following symptoms: the cornea does not become vascularized, but its transparency is nevertheless slightly impaired. Its external surface appears uneven, and is covered with small grayish specks. At a later period effusion of a whitish or bluish matter takes place in different regions, and the haziness being much increased, vision is nearly abolished.

Such are the symptoms which are supposed to characterize rheumatic ophthalmia. If, however, we examine them attentively, we

find that in reality they are merely those which I described to you when treating of keratitis. We have now several patients in our wards affected with ophthalmia answering perfectly to this description; yet if you will take the trouble to question them, you will not find one under the influence of a rheumatic affection. Indeed, I have repeatedly pointed out to you the fact, that the majority of both in-door and out-door patients whom we see presenting these symptoms, have never suffered from rheumatism. How can we, then, when cases of this nature are continually under our eyes, ascribe them to a specific affection, especially when we consider that simple inflammation of one or more of the membranes which enter into the formation of the eye satisfactorily accounts for their presence? It is a fact worthy of remark, that the ophthalmologists who adopt the opinions I am now opposing, do not describe a single form of inflammation, and that when they speak of traumatic inflammation they say it resembles rheumatic ophthalmia. Indeed, it is evidently not on observation but on preconceived theoretical ideas that they have founded the ideal affection we are now examining. Rheumatism attacks fibrous tissues, and as in the eye we have a fibrous tissue, the sclerotica, they have made it the seat of a rheumatic form of inflammation.

The treatment recommended against "rheumatic ophthalmia," affords additional grounds for rejecting it as a disease. The remedies which we are advised to employ are principally those which are used as special agents in the treatment of rheumatism. Now let me ask those of you who have attentively observed the cases of diseases of the eye that we have lately had in our wards, whether they have seen me resort to such measures, when I have met with the group of symptoms that is said to indicate this special affection? They will be obliged to confess, that although I have only recourse to general remedies as adjuvants, or when indicated by the general state of the patient, the plan of treatment which I have adopted has generally been followed by the most advantageous results. On the other hand, does there exist a specific agent capable of curing rheumatism? Many authors say that there are substances, such as tartarized antimony, colchicum, extract of aconitum, &c., which exercise a special influence over this disease. I have very frequently tried them, but with very slight benefit to the patient. In rheumatic affections the usual treatment of inflammatory affections seems to succeed the best.

The few remarks which I have just made will, I think, suffice to show you, that those who recognise this class of specific diseases of the eye are not only wrong in a scientific point of view, but that the ideas which they advocate have also a prejudicial effect on the treatment of ophthalmia, as they induce practi-

tioners to resort to general measures against symptoms which would generally disappear under the influence of topical applications. I have frequently seen the inflammation subdued in a few days by the solution of the nitrate of silver, in cases which had been unsuccessfully treated by general remedies. To fully elucidate this question, it would be requisite to treat it at much greater length than I have done. I have, however, I hope, said enough to draw the attention of practitioners to the subject, and if I have succeeded in so doing I feel certain that my opinions will sooner or later predominate.

London Medical Gazette.

State of the Kidney in Dropsy following Scarlatina.—[From the Proceedings of the Westminster Medical Society.]—Mr. Streeter placed on the table the kidney of a child aged five years, who had died from anasarca succeeding to scarlet fever, with serous effusion in the cavities of the chest and abdomen, and in the substance of the lungs. The kidney was highly congested in its tubular portion. Dr. Bright had informed him that he had just had an opportunity of examining the kidney of a patient who had died under similar circumstances; the kidney was mottled, from irregular distribution of blood through its structure, with probable deposit. The first-mentioned case exhibited nothing worthy of remark, except that no medical treatment had been employed until near its termination,—the parents of the child being scarcely aware that it had scarlatina. No urine could be obtained for the purpose of being tested.

Dr. R. Willis had paid particular attention to the dangerous disease alluded to. He had originally treated it simply by purgatives and diuretics, but having examined the kidney in three fatal cases, and found unequivocal signs of inflammatory action present, he had resorted to blood-letting with the best effects; indeed, in his opinion, depletion was the only mode of checking the disease. In the cases which he had mentioned, the cortical structure, though paler than usual, was exceedingly vascular, and when cut into, a stream of blood poured out; other portions were also very vascular. He had in these cases found urea in the blood, as well as in the serum effused into the different cavities. There was urea in the serum effused in Mr. Streeter's case. He believed, in these cases, that patients died from the formation of a coagulum in the cavity of the heart. His reason for supposing this to be the cause of death was, because he had observed that, up to a certain time, the action of the heart and pulse was proper, but that suddenly the action of the two became confused, and no distinct sounds of the heart could be detected.

London Lancet.